

REVISED

Draft Wetland Mitigation Plan for the CR 595 Project Marquette County Road Commission

MDEQ File No. 11-52-0075-P

October 31, 2012

INTRODUCTION

Marquette County Road Commission (MCRC) is submitting this revised draft wetland mitigation plan in response to comments provided by the U.S. Environmental Protection Agency (EPA) and Michigan Department of Environmental Quality (MDEQ) regarding previously-submitted wetland mitigation plans for the CR 595 project. After receiving input from EPA and MDEQ and conducting an on-site evaluation with MDEQ on September 18, 2012, MCRC is submitting this revised draft wetland mitigation plan.

This draft wetland mitigation plan addresses the requirements of the EPA Compensatory Mitigation for Losses of Aquatic Resources, Final Rule (40 CFR Part 230), as well as Mitigation Rules established under Part 303, Wetland Protection, of the Michigan Natural Resources and Environmental Protection Act, P.A. 451 of 1994, as amended. The plan also provides information relative to mitigation goals and objectives, baseline site characteristics, wetland functional assessment, monitoring protocol and long-term protection of a large-scale preservation area. It is anticipated that, after review and acceptance by EPA and MDEQ, a final wetland (and stream) mitigation plan will be prepared and submitted to MDEQ for implementation.

WETLAND MITIGATION GOALS AND OBJECTIVES

The goals and objectives of this draft wetland mitigation plan are to mitigate for the direct impact to approximately 25.48 acres of wetland as well as all associated indirect or secondary impacts to aquatic resources resulting from the construction of CR 595.

Based upon input from the MDEQ and EPA, this plan was developed using a numerical goal/target of preserving 20 acres of wetland for every one acre of direct wetland impact in order to appropriately mitigate for all wetland impacts associated with CR 595. MCRC established specific objectives in authorizing a search for preservation areas. The minimum wetland preservation acreage to meet this goal is 509.6 acres. As described in depth in the following narrative, the proposed mitigation plan provides for the preservation of approximately 647 acres of high quality wetland. Of the 647 wetland acres, approximately 338 acres are S3 communities. Also, 906 acres of uplands and 23 acres of lakes and open water will be preserved. Therefore there will be a total of 1,576 acres of preserved high quality habitat. The proposed preservation area is adjacent to the Federally-owned McCormick Wilderness. In addition, a substantial related benefit of this proposed plan is the preservation of more than four miles of headwater tributary streams within the proposed preservation area.

Therefore, the proposed preservation area would 1) provide a ratio of approximately 25 to 1 for preserved wetlands as compared to direct wetland impact acreage, 2) preserve almost one and a half times as much upland in addition to the wetlands to serve as both buffer to the protected/preserved wetlands and as an important ecological component of the functions and

values of the wetlands, and 3) preserve an extensive headwater stream area; all in order to meet or exceed the wetland mitigation obligation of MCRC for construction of CR 595.

Preservation Area Mitigation Calculation Summary:

Proposed CR 595 Wetland Impacts	25.48 Acres
S3 Wetlands	10.43 Acres (41%)

Minimum Total Wetland Preservation at 20:1	510 Acres
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Proposed Wetland Preservation	647 Acres
S3 Wetlands	338 Acres (52%)

Wetland Mitigation Goal

The goal of the proposed wetland mitigation plan is to preserve important aquatic resources that meet the following criteria:

1. Provide important physical, chemical or biological functions for the watershed, or are an ecological type that is rare or endangered;
2. Contribute significantly to the ecological sustainability of the watershed;
3. Are under threat of destruction or adverse modification; and,
4. Can be permanently protected through an appropriate real estate or other legal instrument.

Wetland Mitigation Objectives and Selection Criteria

MCRC used the following preservation site selection criteria to identify potential preservation area(s) meeting these goals:

1. Sites that will provide compensation for habitat fragmentation impacts:
 - a. Sites that are adjacent to existing wilderness areas (e.g. McCormick Wilderness);
 - b. Sites that are not already substantially fragmented;
 - c. Sites that are not likely to be isolated by future development/logging (i.e. logged around the perimeter); and,
 - d. Sites in which entire or substantial portions of wetland complexes can be protected.
2. Sites that consist of high quality resources important to the ecosystem:
 - a. Headwater areas (e.g. wetlands and tributary riparian areas);
 - b. Important wildlife habitat;
 - c. Unlogged sites, or if logged, those that have "recovered" from logging; and,
 - d. Habitat for protected species.
3. Sites with a foreseeable demonstrable threat(s) to the site's resources.

4. Large sites (greater than 100 acres each).
5. Sites where property is readily available for purchase or where property owners are willing to place a permanent Conservation Easement over their lands.

PROPOSED WETLAND MITIGATION PRESERVATION AREA

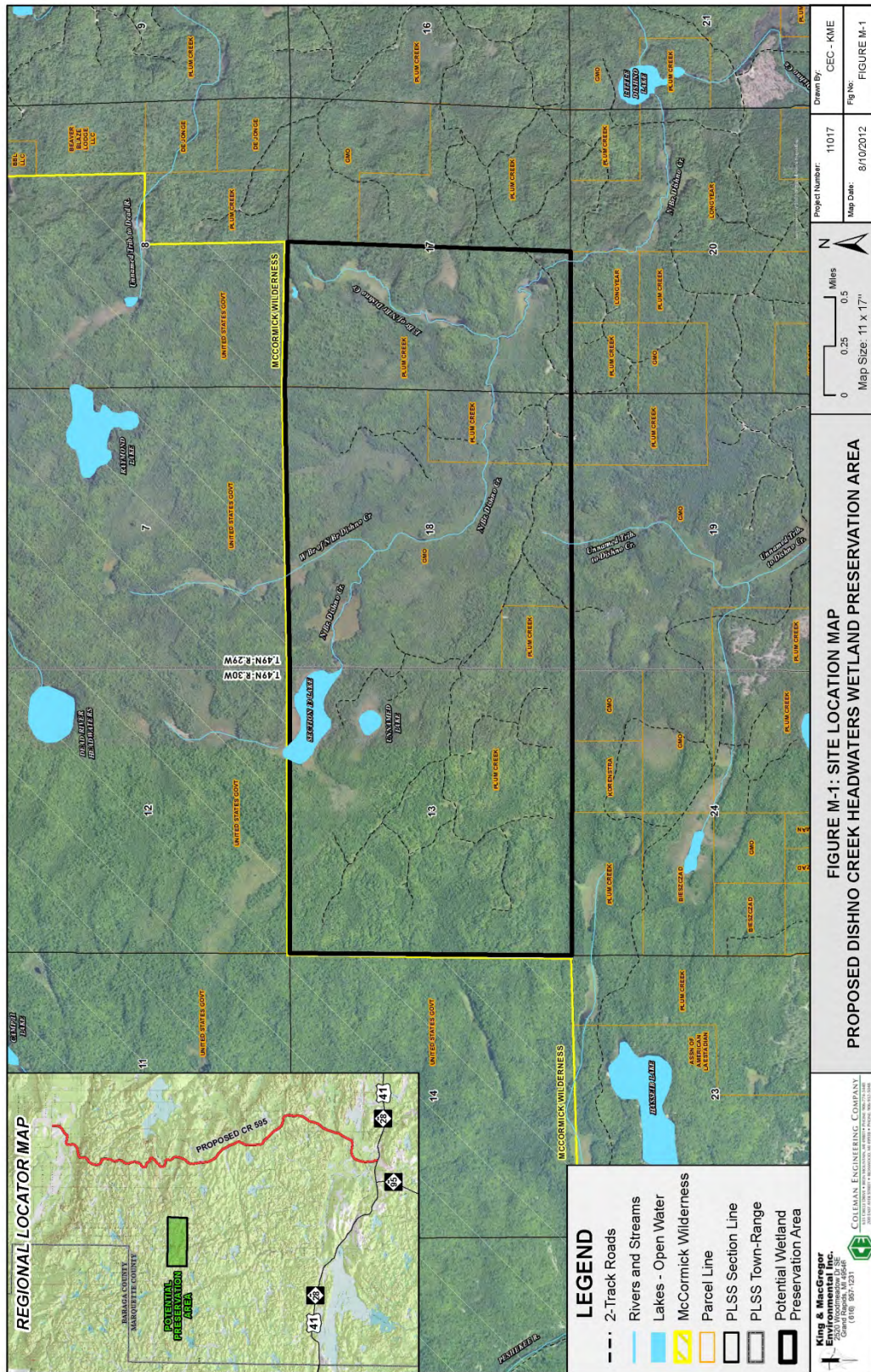
After conducting an extensive review of potential wetland mitigation preservation areas, MCRC identified a 1,576-acre tract of land adjacent to the McCormick Wilderness that met the goal and objectives of the draft wetland mitigation plan. This proposed wetland preservation area is located in Section 18 and the west half of Section 17 of T49N-R29W, and Section 13 of T49N-R30W in Michigamme Township, Marquette County, Michigan (Figure M-1). The majority of this tract is within the Dishno Creek watershed; the southern half of Section 13 is located within the Peshekee River watershed. MCRC has identified the proposed preservation area, for purposes of this document, as the Dishno Creek Headwaters Wetland Preservation Area (DCHWPA).

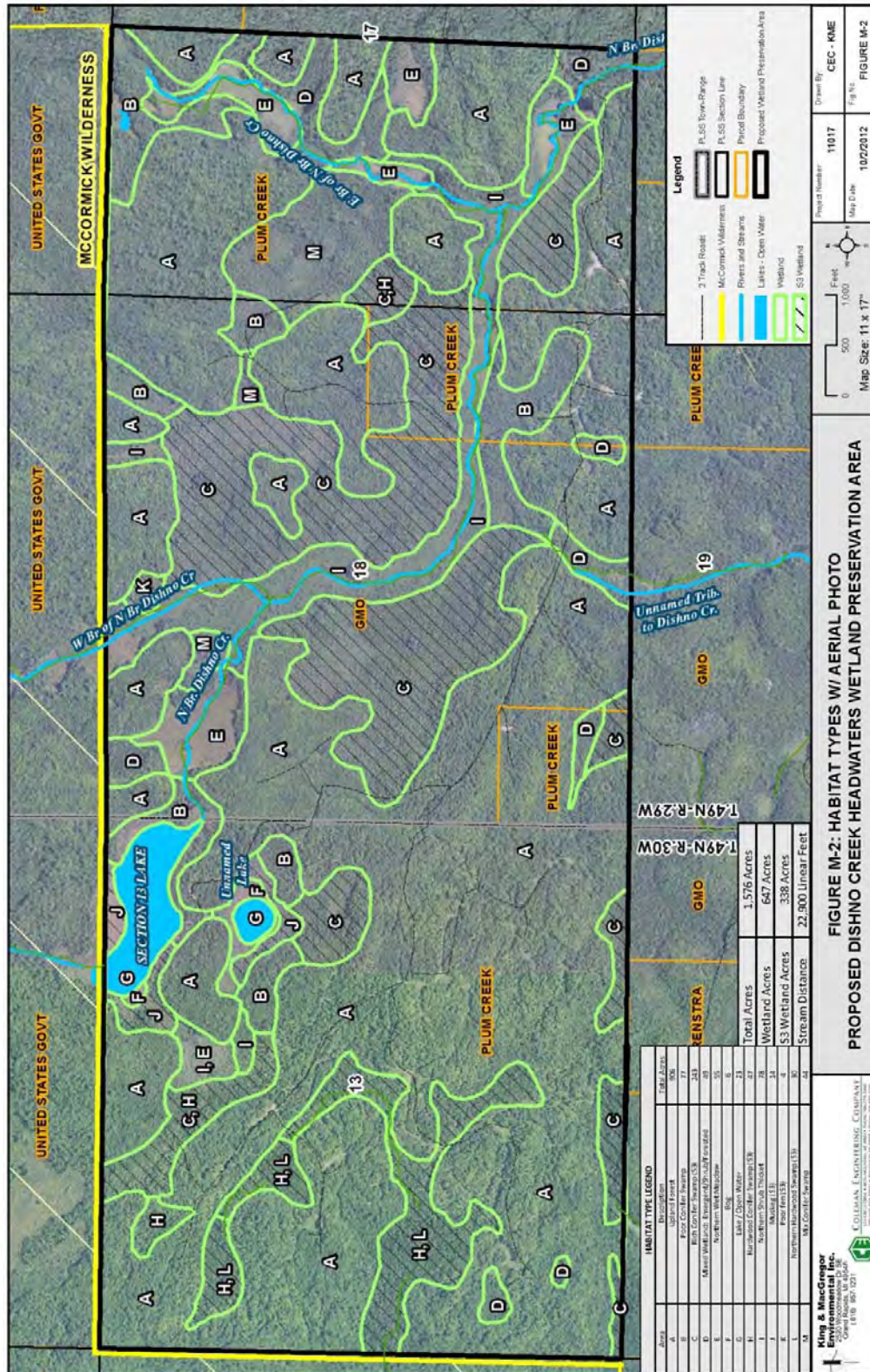
The lands encompassing the proposed DCHWPA are currently owned by two commercial timberland companies; Plum Creek and GMO Renewable Resources. Both of these companies own and actively manage large tracts of timberland throughout the United States. Representatives of Rio Tinto are currently in active negotiations with these companies on behalf of MCRC to purchase the proposed DCHWPA property in order to provide the required Conservation Easements; authorization has been provided by these companies to MCRC and Rio Tinto to conduct site evaluation work and to submit this draft wetland mitigation preservation plan.

It is the intent of Rio Tinto to purchase the land and to place a Conservation Easement on the DCHWPA and then transfer ownership of the land to MCRC. MCRC will act as the steward of the DCHWPA during its ownership of the land and conduct management/stewardship activities as outlined in this plan and as required by the MDEQ permit. It is the intent of MCRC to transfer ownership of the DCHWPA to the federal government in order to expand the existing McCormick Wilderness. Discussions with the U.S. Forest Service have been initiated in order to understand the process for the DCHWPA to become part of the McCormick Wilderness. It is anticipated that this process will be lengthy; therefore MCRC is anticipating that MCRC will serve as the temporary DCHWPA Steward for several years before being able to transfer ownership of the property and stewardship duties to the U.S. Forest Service.

PRELIMINARY BASELINE ECOLOGICAL ASSESSMENT

MCRC retained King & MacGregor Environmental, Inc. (KME) to conduct a preliminary baseline ecological assessment of the proposed DCHWPA to characterize the landscape within the site (Figure M-2). This preliminary assessment included review of available in-office resources including aerial photography, National Wetlands Inventory mapping, USGS topographic mapping, the Soil Survey of Marquette County and the Michigan Natural Features Inventory (MNFI) database (Attachment 1).





KME biologists and botanists conducted on-site evaluations on July 24-25, 2012 and September 18-20, 2012. The purpose of the KME on-site evaluations was to characterize the vegetative communities, conduct a preliminary wetland evaluation in order to develop an estimate of the approximate wetland acreage within the proposed DCHWPA, and identify rare, threatened, and endangered species and their potential habitat. Due to the large size of the area of investigation not all of the proposed DCHWPA was traversed by KME biologists and botanists. Habitat characterization was conducted within representative habitat types. The identified habitat types within the proposed DCHWPA were evaluated and characterized during the on-site evaluations, and representative photographs were taken of each identified habitat type. KME also evaluated the identified community types to determine whether they are considered to be vulnerable to extirpation (i.e. whether they are considered "S3" wetlands as defined by MNFI).

Site Characterization

The proposed DCHWPA contains a variety of natural community types defined by MNFI as S3 wetland communities which are, *"Vulnerable in the state due to a restricted range, relatively few occurrences (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation."* The wetlands within the proposed DCHWPA include rich conifer swamp (S3), hardwood-conifer swamp (S3), northern hardwood swamp (S3), muskeg (S3), poor fen (S3), poor conifer swamp, northern shrub thicket, and northern wet meadow. The proposed DCHWPA also contains a small lake and a bog, as well as substantial areas of varied upland forest. In addition, the headwaters of Dishno Creek are located within the proposed DCHWPA and several small tributaries to Dishno Creek and its branches flow northwest to southeast through the proposed DCHWPA. Based on review of USGS topographic mapping, approximately 22,800 lineal feet of streams are located within the proposed DCHWPA preservation area.

Land within the proposed DCHWPA is presently managed to optimize timber production. The majority of the site contains significant areas of marketable timber at varying age classes. Vehicular access to the site is limited to existing two-track forest roads located with Section 13 and the south portion of Section 18. The majority of the proposed DCHWPA is accessible only by foot.

A preliminary botanical study performed during the July 2012 site evaluations identified 99 species native to Michigan. The mean coefficient of conservatism was 5.5 with a Floristic Quality Index (FQI) score of 54.7. Areas with FQI scores 50 and above are considered extremely rare and represent a significant component of Michigan's native biodiversity and natural landscapes.

After completing the above-referenced on-site evaluations and review of available in-office resources, KME prepared a graphic (Figure M-2) depicting the specific natural community types within the proposed DCHWPA. The following is a description of each natural community depicted in Figure M-2 and its corresponding area designation:

Natural Community Type and Habitat Descriptions

Upland Forest (approximately 906 acres)

This habitat type, described on Figure M-2 as Area A, is predominately upland forest. Small wetland depressions, drainageways, and mesic pockets exist intermittently throughout this area.

The overstory is typically dominated by sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), Eastern white pine (*Pinus strobus*), paper birch (*Betula papyrifera*), and occasionally Northern red oak (*Quercus rubra*) and Northern white cedar (*Thuja occidentalis*). Most trees within the upland forests are less than 14 inches diameter at breast height (DBH). However, occasional white cedars exceeding 18 inches DBH, maples exceeding 20 inches DBH, and yellow birches (*Betula alleghaniensis*) and Eastern white pines exceeding 30 inches DBH were documented throughout this area. Despite relatively uneven terrain consisting of numerous boulders, occasional rock outcroppings and ravines, timber harvesting has occurred in this area in the past. Scattered open areas near logging routes are in the process of reverting back to forest. Subcanopy species include sugar maple, red maple, Eastern white pine, white spruce (*Picea glauca*), and balsam fir (*Abies balsamea*). The shrub/sapling layer is characterized by sugar maple and red maple saplings, balsam fir, blackberry (*Rubus allegheniensis*), red raspberry (*Rubus idaeus*), striped maple (*Acer pensylvanicum*), mountain maple (*Acer spicatum*), American hophornbeam (*Ostrya virginiana*), paper birch (*Betula papyrifera*), alternate-leaved dogwood (*Cornus alternifolia*), American fly honeysuckle (*Lonicera canadensis*), and red elderberry (*Sambucus pubescens*). Prevalent species in the herbaceous stratum include wild sarsaparilla (*Aralia nudicaulis*), bunchberry (*Cornus canadensis*), intermediate woodfern (*Dryopteris intermedia*), false Solomon's seal (*Smilacina racemosa*), and spring ephemerals such as spring beauty (*Claytonia virginica*) and yellow trout-lily (*Erythronium americanum*). Small wetland pockets widely distributed within this habitat type are typified by a canopy of red maple, yellow birch, and balsam fir, with ground flora that typically includes Cinnamon fern (*Osmunda cinnamomea*), lady fern (*Athyrium filix-femina*), interrupted fern (*Osmunda claytoniana*), and eastern rough sedge (*Carex scabrata*).

Poor Conifer Swamp (approximately 77 acres)

This natural community, shown on Figure M-2 as Area B, is a nutrient-poor, forested wetland type generally characterized by a canopy of relatively robust black spruce (*Picea mariana*). The understory consists of low ericaceous evergreen shrubs, a limited herbaceous layer, and a hummocky carpet of sphagnum (*Spagnum spp.*) mosses. The shrub stratum is dominated by Labrador tea (*Ledum groenlandicum*) and leatherleaf (*Chamaedaphne calyculata*). Less abundant shrubs include black chokeberry (*Aronia prunifolia*) and mountain holly (*Nemopanthes mucronata*). The low-shrub and herbaceous layer is relatively depauperate and contains the following dominants: creeping snowberry (*Gaultheria hispidula*), low sweet blueberry (*Vaccinium angustifolium*), Canada blueberry (*Vaccinium myrtilloides*), small cranberry (*Vaccinium oxycoccos*), goldthread (*Coptis trifolia*), bunchberry, wild blue flag iris (*Iris versicolor*), northern bugleweed (*Lycopus uniflorus*), false mayflower (*Smilacina trifolia*), and starflower (*Trientalis borealis*).

Rich Conifer Swamp (approximately 243 acres)

This S3 natural wetland community type, shown on Figure M-2 as Area C, is a groundwater-influenced, minerotrophic, forested community dominated by Northern white cedar ranging in size up to 18 inches DBH. Other tree species documented within this wetland forest type include balsam fir, black spruce, Eastern white pine, red maple, and yellow birch. The sapling/shrub stratum includes saplings of the tree species listed previously and also shrubs such as tag alder (*Alnus rugosa*), mountain holly, Labrador tea, low sweet blueberry, Canada blueberry, American fly honeysuckle, wild black currant (*Ribes americanum*), and swamp red current (*Ribes triste*). The herbaceous layer has a relative diversity of *Carex* species, ferns, and mosses. Cinnamon fern is abundant. Additional abundant herbaceous flora include

goldthread, bunchberry, creeping snowberry, wild blue flag iris, twinflower (*Linnaea borealis*), Canada mayflower, naked miterwort (*Mitella nuda*), round-leaved pyrola (*Pyrola rotundifolia*), dwarf raspberry (*Rubus pubescens*), mad-dog skullcap (*Scutellaria lateriflora*), and starflower. Blunt-leaf orchid (*Platanthera obtusata*) and long beech-fern (*Thelypteris phegopteris*) were also observed. Diverse microtopography within this area includes plentiful hummocks, tree throw mounds, and large nursery logs.

Mixed Wetland: Emergent/Shrub/Forested (approximately 49 acres)

This habitat type, shown on Figure M-2 as Area D, is a large wetland complex primarily associated with the Dishno Creek floodplain and headwater streams where long-term successional cycles associated with beaver activity have created a natural, heterogeneous landscape comprised of patches of northern wet meadow, northern shrub thicket, and miscellaneous young patches of varied swamp forest. The northern wet meadow communities are dominated by bluejoint grass (*Calamagrostis canadensis*), tussock sedge (*Carex stricta*), wiregrass sedge (*Carex lasiocarpa*), fowl manna grass (*Glyceria striata*), and fowl meadow grass (*Poa palustris*). Broad-leaved cat-tail (*Typha latifolia*), wool-grass (*Scirpus cyperinus*), and green bulrush (*Scirpus atrovirens*) are also common graminoids. Wetland forbs identified within this area include swamp aster (*Aster puniceus*), flat-topped white aster (*Aster umbellatus*), joe-pye-weed (*Eupatorium maculatum*), common boneset (*Eupatorium perfoliatum*), grass-leaved goldenrod (*Euthamia graminifolia*), jewelweed (*Impatiens capensis*), wild blue flag iris, American water-horehound (*Lycopus americanus*), tufted loosestrife (*Lysimachia thyrsiflora*), water smartweed (*Polygonum amphibium*), common skullcap, Canada goldenrod (*Solidago canadensis*), late goldenrod (*Solidago gigantea*), purple meadow rue (*Thalictrum dasycarpum*), and blue vervain (*Verbena hastata*). Sensitive fern (*Onoclea sensibilis*) and cinnamon fern are locally abundant. The northern shrub thicket portions of this wetland complex are characterized by a dominance of tag alder, willows (*Salix spp.*), and sweet gale (*Myrica gale*). Loose assemblages of trees and tree saplings were documented succeeding former shrub and herbaceous areas throughout. Tree species include balsam fir, red maple, black spruce, balsam poplar (*Populus balsamifera*), quaking aspen (*Populus tremuloides*), and Northern white cedar.

Northern Wet Meadow (approximately 55 acres)

This natural community type, shown on Figure M-2 as Area E, includes predominately emergent wetlands with patches of shrub-scrub associated with small tributaries of Dishno Creek where historical beaver flooding areas are currently within an early stage of the successional process. These Northern Wet Meadow areas are dominated by bluejoint grass, threeway sedge (*Dulichium arundinaceum*), wiregrass sedge, fowl manna grass, tussock sedge, and fowl meadow grass. Other locally abundant herbaceous species include: broad-leaved cat-tail, wool-grass, green bulrush, Michaux's sedge (*Carex michauxiana*), marsh St. John's wort (*Triadenum sp.*), Canada anemone (*Anemone canadensis*), swamp milkweed (*Asclepias incarnata*), swamp aster, flat-topped white aster, joe-pye-weed, common boneset, grass-leaved goldenrod, jewelweed, wild blue flag iris, American water-horehound, northern bugleweed, water smartweed, common skullcap (*Scutellaria galericulata*), bog goldenrod (*Solidago uliginosa*), Canada goldenrod, late goldenrod, purple meadow rue, and blue vervain. Narrow-leaved gentian (*Gentiana linearis*), a forb listed as Threatened in Michigan, was documented locally throughout these areas. Shrub thickets composed primarily of tag alder occur in small patches within and near the edges of the herbaceous meadow areas. Other shrub associates

which occur within this community include black chokeberry, meadowsweet (*Spiraea alba*), silky dogwood (*Cornus amomum*), red-osier dogwood (*Cornus stolonifera*), willows, and sweet gale.

Bog (approximately 6 acres)

This natural community, shown on Figure M-2 as Area F, is a nutrient-poor, non-forested wetland found near the margins of both lakes. This community is dominated by sphagnum moss species, including *Sphagnum magellanicum*, *S. angustifolium*, and *S. fuscum*, other herbaceous plants including few-seeded sedge (*Carex oligosperma*), intermediate sundew (*Drosera intermedia*), round-leafed sundew (*Drosera rotundifolia*), white beak rush (*Rhynchospora alba*), and numerous pitcher-plants (*Sarracenia purpurea*). The shrub layer includes leatherleaf, bog rosemary (*Andromeda glaucophylla*), Labrador-tea, and bog laurel (*Kalmia polifolia*).

Lakes / Open Water (approximately 23 acres)

Two lakes, shown on Figure M-2 as Area G, are located within the proposed DCHWPA; Section 13 Lake and a small lake associated with the above-described bog.

Hardwood-Conifer Swamp (approximately 47 acres)

This S3 natural community type, shown on Figure M-2 as Area H, is a minerotrophic, forested wetland type dominated by a mixture of primarily lowland hardwoods and conifers. Species composition is variable within this community type. Generally, the canopy is dominated by red maple, yellow birch, Northern white cedar, and tamarack (*Larix laricina*). Eastern white pine, black ash (*Fraxinus nigra*), black spruce, and white spruce are occasional canopy associates. Along with these tree species, balsam fir and an occasional balsam poplar occupy the subcanopy. The sapling/shrub stratum includes saplings of the tree species listed previously and also shrubs such as tag alder, red-osier dogwood, American fly honeysuckle, Michigan holly (*Ilex verticillata*), wild black currant, and swamp red current. The ground layer ranges from sparse to dense, and generally is typified by numerous mossy hummocks and saturated hollows. Herbaceous species include goldthread, bunchberry, intermediate wood fern, oak fern (*Gymnocarpium dryopteris*), Canada mayflower, partridge berry (*Mitchella repens*), dwarf raspberry, starflower, Carex sedges, fowl manna grass (*Glyceria striata*), jewelweed (*Impatiens capensis*), northern bugle weed, sensitive fern, cinnamon fern, and royal fern. Additional abundant ground flora include wild sarsaparilla (*Aralia nudicaulis*), marsh marigold (*Caltha palustris*), water horsetail (*Equisetum fluviatile*), creeping snowberry, twinflower, wild blue flag iris, and round-leaved pyrola. Typical of this natural community type, diverse microtopography includes numerous hummocks, tree throw mounds, small vernal pools, and nursery logs. Portions of this S3 forested wetland community closely resemble rich conifer swamp or northern hardwood swamp and frequently occur in complexes with these other S3 forested wetland types.

Northern Shrub Thicket (approximately 78 acres)

This natural community type, shown on Figure M-2 as Area I, is a shrub-dominated wetland type occurring on flat ground along streams and beaver floodings. Northern shrub thickets within the proposed preservation area are dominated by tag alder, but shrub associates also include silky dogwood, red-osier dogwood, Michigan holly, pussy willow, and slender willow (*Salix petiolaris*). Scattered trees and tree saplings can be found invading the northern shrub thickets. Typical

tree species include balsam fir, red maple, tamarack, black spruce, balsam poplar, and Northern white cedar.

Muskeg (approximately 14 acres)

This S3 natural community type, shown on Figure M-2 as Area J, has an overstory component that is dominated by widely-scattered, stunted black spruce and occasional tamarack. The sapling/shrub stratum is dominated by species including: black spruce, black chokeberry, and mountain holly. Sphagnum mosses are prevalent. Abundant plants within the herbaceous and low shrub stratum are: Leatherleaf, Labrador tea, bog rosemary, *Carex* species, cotton-grass (*Eriophorum spp.*), beak-rushes (*Rhynchospora spp.*), goldthread, blue flag iris, false mayflower, pitcher-plant, low sweet blueberry, Canada blueberry, and small cranberry.

Poor Fen (approximately 4 acres)

This S3 natural community type, shown on Figure M-2 as Area K, is classified as poor fen because portions of its botanical community exhibit minerotrophic (mineral-rich from continuous groundwater exposure) conditions and other portions are somewhat ombrotrophic (bog-like) because of hummocky sphagnum microtopography separating the upper substrate from the effects of groundwater flow. Species diversity is strongly correlated to the hummock-hollow microtopography; each individual hummock likely has distinct gradients in water and substrate chemistry, soil moisture, aeration, and nutrients. Therefore, the vegetation within this wetland is relatively diverse and differs greatly from nearby wetlands. Abundant species are: *Carex* sedges, three-way sedge, sphagnum mosses, blue flag iris, Labrador tea, leatherleaf, round leaved sundew, bluejoint grass, marsh cinquefoil (*Potentilla palustris*), goldthread, twinflower, bog goldenrod, and small cranberry.

Northern Hardwood Swamp (approximately 30 acres)

This S3 natural community type, shown on Figure M-2 as Area L, is a seasonally inundated, deciduous swamp forest community dominated by black ash. Saturated pockets and evidence of vernal pools were observed. Canopy associates include red maple, yellow birch, balsam fir, and northern white cedar. The shrub layer consists of saplings of overstory species along with Michigan holly and tag alder. A diverse ground flora includes northern bugleweed, mad-dog skullcap (*Scutellaria lateriflora*), jack-in-the-pulpit (*Arisaema triphyllum*), marsh marigold, fringed sedge (*Carex gynandra*), great bladder sedge (*Carex intumescens*), goldthread, fragrant bedstraw (*Galium triflorum*), fowl manna grass, jewelweed, wild blue flag iris, Canada mayflower, dwarf raspberry, and wild violets (*Viola spp.*). Ferns and allies include sensitive fern, cinnamon fern, royal fern, ostrich fern (*Matteuccia struthiopteris*), oak fern, and horsetails (*Equisetum spp.*).

Mixed Conifer Swamp (approximately 44 acres)

This natural community type is shown on Figure M-2 as Area M. It is a heterogeneous composite of several forested wetland community types, generally dominated by a mixture of various conifer species such as Northern white cedar, tamarack, Eastern white pine, black spruce, white spruce, and balsam fir. Scattered, small portions of this wetland community type may be ecologically similar to S3 communities described previously.

Community Type	Section 13 (Acres)	Section 18 (Acres)	Section 17 (Acres)	Totals (Acres)
Upland Forest	447	300	159	906
Poor Conifer Swamp	20	37	20	77
Rich Conifer Swamp (S3)	39	181	23	243
Mixed Wetland	4	17	28	49
Northern Wet Meadow	3	18	34	55
Bog	6	0	0	6
Lakes/Open Water	23	0	0	23
Hardwood Conifer Swamp (S3)	43	1	3	47
Northern Shrub Thicket	5	57	16	78
Muskeg (S3)	14	0	0	14
Poor Fen (S3)	0	4	0	4
Northern Hardwood Swamp (S3)	30	0	0	30
Mixed Conifer Swamp	0	8	36	44
				1,576
Total Wetland	164	323	160	647
Total S3 Wetland	126	186	26	338

WETLAND FUNCTIONAL ASSESSMENT

KME assessed significant areas of the existing wetland complexes within the proposed DCHWPA using the Michigan Rapid Assessment Method for Wetlands (MiRAM) Version 2.1 to provide information regarding the existing wetland values and functions. MiRAM is a rating system tool developed by MDEQ to provide a protocol for evaluating the functional value of wetlands in Michigan. MiRAM assesses wetland functional value using seven metrics:

1. Wetland size and distribution;
2. Buffers and intensity of surrounding land use;
3. Hydrology;
4. Habitat alteration and habitat structure development;
5. Special situations;
6. Vegetation, interspersed, and habitat features;
7. Scenic, recreational, and cultural values.

KME identified a total of seven representative MiRAM scoring areas within the proposed DCHWPA consistent with the MiRAM User's Manual. Due to the expansive area of the proposed DCHWPA, many smaller wetlands and drainageways have not yet been delineated. It is anticipated that these wetlands will be assessed during the baseline ecological assessment described below.

For comparison/mitigation analysis purposes, wetland functional assessments using MiRAM were also conducted on the wetland complexes proposed to be impacted within the CR 595 corridor. The wetland functional assessment for the proposed DCHWPA is presented to

demonstrate that the proposed DCHWPA has the reasonable potential to replace the functions and values of the wetlands proposed to be impacted by the construction and use of CR 595. The wetland functional assessments for CR 595 and the proposed DCHWPA were previously submitted and are summarized below.

MiRAM - CR 595

MiRAM was employed during the 2010 and 2011 growing seasons to assess the functional value of the wetlands along the CR 595 corridor. KME conducted the MiRAM evaluation on 70 different wetland complexes along the CR 595 corridor. The MiRAM wetland evaluation area sizes ranged from 0.1 acre to 50 acres. MiRAM functional value scores for those 70 different wetland complexes ranged from 30 to 90.5. In the Upper Peninsula, MiRAM scores of less than 40 generally indicate low wetland functional value, MiRAM scores between 41 and 69 generally indicate moderate wetland function and MiRAM scores of 70 and over generally indicate high wetland functional value.

Of the 70 MiRAM wetland evaluation areas that were rated, 34 wetlands (48.5%) scored within the high wetland functional value range. Many of the highest rated wetland scoring areas were components of riparian systems, as a host of ecological functions are provided by those riparian systems and associated wetlands.

Thirty-three (47%) of the MiRAM wetland evaluation areas scored within the moderate wetland functional value range. The wetlands with these scores appear to have some ecological impairment but remain viable ecological systems. Wetlands in this category have functional values typical of the majority of wetlands that are found throughout Michigan.

Three (4.5%) of the MiRAM wetland scoring areas were scored within the low functional value range. The wetlands with these scores generally have been degraded and generally failed to show significant recovery, with the majority of them being small, isolated pockets that are most susceptible to degradation.

Some of the wetlands that will be unavoidably impacted by CR 595 are ranked as S3 wetlands. As proposed, the CR 595 project will impact approximately 10.43 acres of wetlands ranked S3. The predominant S3 wetland that is impacted by CR 595 is Hardwood Conifer Swamp. The breakdown of the S3 wetlands impacted on the CR 595 project is as follows:

- 8.28 acres (79.4%) of the 10.43-acre total are Hardwood Conifer Swamp (S3/G4)
- 1.76 acres (16.9%) of the 10.43-acre total are Rich Conifer Swamp (S3/G4)
- 0.39 acres (3.7%) of the 10.43-acre total are Northern Hardwood Swamp (S3/G4)

MiRAM - Proposed DCHWPA

MiRAM was employed to assess the identified wetlands within the proposed DCHWPA on July 23 and 24, 2012. Unlike the MiRAM assessment of CR 595 where 70 wetland complexes were scored using MiRAM along a proposed construction corridor, the main focus of the MiRAM assessment for the proposed DCHWPA is one large wetland complex contiguous to Dishno Creek with diverse habitat assemblages. KME conducted the MiRAM evaluation on six

representative 50-acre MiRAM scoring areas within the large wetland complex and one 24-acre scoring area within a smaller wetland complex in Section 13. This assessment approach is intended to provide a representative description of the wetland values and functions within the proposed DCHWPA. Given this approach, the proposed DCHWPA MiRAM functional value scores of the seven selected representative areas ranged from 61.0 to 86.5.

Of the seven MiRAM wetland evaluation areas that were rated, all six of the MiRAM areas within the large, un-fragmented wetland complex scored within the high wetland functional value range. This large wetland system provides an array of wetland values, including flood control, protection for subsurface water resources, diverse wildlife habitat, fish and aquatic species habitat, expansive recreational area and identified habitat for state threatened and special concern species. The highest rated wetland scoring areas were components of Dishno Creek riparian areas, due to these areas serving a host of ecological functions, including excellent habitat for narrow-leaved gentian. Significant populations of blooming narrow-leaved gentian plants were observed within several areas of the proposed DCHWPA.

The 24-acre MiRAM wetland evaluation area scored within the moderate wetland functional value range. This MiRAM area is located in the northwestern portion of Section 13 within an area crossed by existing logging roads and other limited site disturbance.

PROTECTED SPECIES

A query of the MNFI database was conducted to document the known occurrences of endangered, threatened and special concern species and special habitats within the area of the proposed DCHWPA (Attachment 1). The MNFI database lists the following species:

Common loon (<i>Gavia immer</i>)	State Threatened
Dwarf bilberry (<i>Vaccinium cespitosum</i>)	State Threatened
Farwell's water milfoil (<i>Myriophyllum farwellii</i>)	State Threatened
Narrow-leaved gentian (<i>Gentiana linearis</i>)	State Threatened
Northern blue butterfly (<i>Lycaeides idas nabokovi</i>)	State Threatened
Fragrant cliff wood fern (<i>Dryopteris fragans</i>)	State Special Concern

All of the species listed above have the potential of occurring within the diverse habitats of the proposed DCHWPA.

Moose (*Alces americanus*), a species of state special concern, not listed in the above-referenced MNFI database query, and narrow-leaved gentian, were observed during the July and September 2012 field evaluations.

BASELINE ECOLOGICAL ASSESSMENT

A baseline ecological assessment of the DCHWPA will be conducted on behalf of the MCRC by KME during the 2013 growing season. A Baseline Ecological Report of the Conservation Easement area will be submitted to the MDEQ for review by November 1, 2013. Qualified individuals able to identify vegetation to genus and species will conduct the baseline ecological assessment.

The Baseline Ecological Report shall include a land use history, a current aerial photo, appropriate maps, and a plan view that depicts the property boundaries for the Conservation Easement area(s). The Baseline Ecological Report shall include a delineation of all wetland community types following The Natural Communities of Michigan: Classification and Description, Kost et al 2007, with acreage estimates for each community type. The Baseline Ecological Report shall also include the location of natural features (streams, endangered plants or animals, etc.), existing and adjacent land uses (roads, utility lines, structures, vegetative buffer area, trails, etc.), areas of invasive species, drains or ditches, and other anthropogenic influences (stormwater, etc.). In addition, the Baseline Ecological Report shall include the following information for each wetland community:

- a. Photographic documentation collected from permanent photo stations located within each wetland community type as identified within the Baseline Ecological Report. Photos must be labeled with the location (i.e. GPS coordinates and shown on a site map), date photographed, and direction.
- b. Plant community data collected within sample plots for each wetland community type shown within the Baseline Ecological Report. The plot data shall identify plant species and absolute percent cover for each species within each plant strata (herbaceous, shrub, tree overstory) located within sample plots. The plant community data shall be collected once between May 15 and July 1 and once between August 1 and September 15.

The number of sample plots necessary within each wetland type shall be determined by use of a species-area curve or other approach approved by the MDEQ. The minimum number of sample plots for each wetland type shall be no fewer than 15, unless a correctly computed species area curve shows that fewer samples are sufficient. Sample plots shall be located on the sample transect at evenly spaced intervals or by another approach acceptable to the MDEQ. If additional or alternative sample transects are needed to sufficiently evaluate each wetland type, they must be approved in advance in writing by the MDEQ.

The herbaceous layer (all non-woody plants and woody plants less than 3.28 feet in height) shall be sampled using a 3.28 foot by 3.28 foot sample plot. The shrub and tree layer shall be sampled using a 30-foot radius sample plot. The data recorded for each herbaceous layer sample plot shall include a list of all living plant species, and an estimate of absolute percent cover in five percent intervals for each species, bare soil areas, and open water areas relative to the total area of the plot. The number and species of surviving, established, and free-to-grow trees and surviving, established, and free-to-grow shrubs shall be recorded for each 30-foot radius plot.

Provide plot data and a list of all the plant species identified in the plots and otherwise observed during monitoring. Data for each plant species must include common name, scientific name, wetland indicator category from, physiognomic classification, and whether the species is considered native according to the Michigan Floristic Quality Assessment (Michigan Department of Natural Resources, 2001). Nomenclature shall follow Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

The location of sample transects and plots shall be identified in the monitoring report on a plan view showing the location of wetland types. Each transect and sample plot shall be permanently and visibly staked at a frequency sufficient to locate the transect and sample plots in the field.

- c. Observations of animal use of Conservation Easement areas.
- d. Written summary of all data collected and discussion of any identified problem areas and potential corrective measures to address them.

Invasive Species Monitoring

A detailed evaluation of the DCHWPA will be conducted during the Baseline Ecological Assessment to identify and evaluate invasive species. Because invasive species typically gain access to native habitats through human activities or habitat modification, the proposed invasive species monitoring protocol will focus on potential pathways of introduction. Based on a preliminary botanical survey, very few invasive species (e.g., spotted knapweed and European thistle) exist within the proposed DCHWPA.

Biologists and botanists will conduct periodic monitoring for invasive species within the DCHWPA. The monitoring will be conducted within areas identified during the baseline ecological assessment as containing invasive species and/or areas in proximity to roadways/trails or other existing disturbances that may represent introduction pathways.

Should invasive species be identified within the DCHWPA, the following protocol will be implemented to remove or limit the distribution of the identified species:

- The extent of infestation and potential infestation pathways will be defined to the extent possible and reported to MDEQ;
- A plan will be developed for MDEQ review and approval to limit or remove the introduction pathway from the preservation area. This plan may include such proposed activities as removal or blockage of trails, installation of signs to inform the public or limit access;
- A plan will be developed for MDEQ review and approval to remove the identified invasive species from the preservation area, if possible. The invasive species removal plan may include a combination of physical removal, herbicide application, introduction of species that prey on the invasive species, passive trapping or in some cases a no action alternative;
- The invasive species removal plan will be implemented as soon as practicable depending on such things as the invasive species life cycle, site access, regulatory agency approval, or work force availability.

The results of the invasive species plan implementation will be provided in a report to MDEQ with recommendations for further control measures.

SITE PROTECTION INSTRUMENT

MCRC proposes to execute a Conservation Easement over all of the DCHWPA in a form identical to the Conservation Easement model on the MDEQ's website. The original executed Conservation Easement and associated exhibits will be sent to the MDEQ for review and recording prior to commencement of any permitted work or within 60 days of the issuance of this permit whichever occurs first. The Conservation Easement documents will be sent to Conservation Easement Coordinator, MDEQ, Water Resources Division, P.O. Box 30458, Lansing, Michigan, 48909, with a copy of the executed easement mailed to the District Office.

SITE STEWARDSHIP

As described above, it is proposed that the property within DCHWPA will be purchased from GMO and Plum Creek by Rio Tinto Eagle (RTE). RTE will place a Conservation Easement over the DCHWPA prior to transferring the ownership of the property to MCRC. It is the intent of MCRC to ultimately transfer ownership of the property to the U.S. Forest Service. MCRC will act as steward of the DCHWPA until such time as the ownership and stewardship of the DCHWPA can be transferred to the U.S. Forest Service.

A Draft Cooperative Stewardship Agreement (Attachment 2) has been prepared outlining the roles of MCRC (Permittee and Steward), RTE (Grantor) and the MDEQ (Grantee). It is anticipated that a new Stewardship Agreement will be prepared at the time of transfer of ownership and stewardship to the U.S. Forest Service.

LONG-TERM MANAGEMENT PLAN AND REPORTING

The primary goal of the Long-Term Management Plan is to ensure the DCHWPA is managed to maintain its existing unique ecological qualities. The Conservation Easement along with this management plan will help to ensure the permanent protection of this unique habitat that might otherwise be lost or degraded.

Short-Term Management Activities

To achieve long-term management goals, it is necessary to implement short-term activities to more fully characterize the preservation area and address site-specific potential threats to the values and functions of the DCHWPA. All of the proposed short-term management activities will be completed within the 5-year MDEQ permit term. The short-term management activities include the following:

- Conduct baseline ecological assessment
- Prepare and submit the Baseline Ecological Report
- Implement site management activities to prevent threats to the preservation area (described below)

The primary threats to this remote preservation area include motor vehicle use, unauthorized logging and invasive species introduction.

The proposed short-term management activities include vehicular access prevention, signage and invasive species management. These activities are briefly described below and are described on the attached 3-sheet plan set (Attachment 3). All of the proposed short-term management activities will be completed by KME and MCRC or its designated contractor, and oversight will be provided by KME, as appropriate. The short-term management activities will be funded by MCRC through an agreement with RTE.

Vehicular Access Prevention

Motor vehicle usage could seriously degrade the DCHWPA by causing erosion, soil compaction, ground cover disturbance, and distribution of invasive plant species. Therefore all logging road and off-road vehicle trail-head access points will be securely blocked. This will be accomplished by removing existing culverts and a timber bridge, installing boulder barriers and tree planting at existing points of access. Existing un-vegetated roads and trails will be disked and seeded with native grasses.

Signage

Recreational users may be unaware of the new Conservation Easement. Signage will be posted around the perimeter of the DCHWPA and shall be placed at adequate frequency, visibility, and proper height for viewing. Signage will be of suitable material to withstand climatic conditions. Signs will explain recreational usage limitations and will include the following language:

WETLAND CONSERVATION EASEMENT
NO CONSTRUCTION OR PLACEMENT OF STRUCTURES ALLOWED.
NO MOWING, CUTTING, FILLING, DREDGING OR
APPLICATION OF CHEMICALS ALLOWED.
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
NO MOTOR VEHICLES

Invasive Species Management

The preliminary baseline ecological assessment identified two invasive plant species in limited areas in and around logging roads and landing areas; European swamp thistle (*Cirsium palustre*) and spotted knapweed (*Centaurea maculosa*). However, populations are not exhibiting invasive tendencies, and will likely not significantly affect native vegetation within the DCHWPA.

The Baseline Ecological Report described above will identify locations of invasive species. If large areas of invasive species are identified during the baseline ecological assessment, a specific vegetative management plan will be provided for implementation during the following year.

Long-Term Management Plan

After the Baseline Ecological Report has been approved, a final Long-Term Management Plan will be prepared. The Long-Term Management Plan will include the following details:

- A management strategy to maintain conservation resource values and purposes of the Conservation Easement;

- A vegetation management strategy for controlling non-native, invasive plant species;
- Overall site management required to minimize any continued threats to the Conservation Easement Area that could have a negative effect on the long-term viability of the Conservation Easement; and,
- A monitoring and reporting schedule.

Attachment 1 – Michigan Natural Features Inventory Database Search

Attachment 2 – Draft Cooperative Stewardship Agreement

Attachment 3 – Preservation Area Short-Term Management Activities Plan Set

Attachment 1

Michigan Natural Features Inventory database



Search Results for Town 49N, Range 29W

Displaying Record 1 to 7 of 7 Records Found

Query Results Generated on Aug 10, 2012






Database Updated on Mar 15, 2012

New Search

Refine Search

Previous 25 Records

Next 25 Records ►

Photo	Common Name	Scientific Name	State Status	Federal Status	Last Observed Date	Element Category	Mapping Precision	Site of Observation		Best Documentation of EO				Town	Range	Section	County
		Mesic Northern Forest			1979	Community	S	Mccormick Tract	Pregitzer, K.S. 1981. Relationships among Physiography, Soils and Vegetation of the McCormick Exp. Forest.... Ph. D. Diss., UM.	49N	29W	4	Marquette				
	Common loon	Gavia immer	T		1985	Animal	M	Raymond Lake	Hammill, J.H. 1982. Results of the 1982 Upper Peninsula Loon Survey.	49N	29W	7,8	Marquette				
	Common loon	Gavia immer	T		2009	Animal	M	Wolf Lake - Marquette County	Robinson, W.L. 1986. Michigan Loon Survey, 1985. Annotated Appendix II. Active Nesting Locations.	49N	29W	35	Marquette				
	Common loon	Gavia immer	T		1993-07	Animal	M	Vanriper Lakes	Westhoven, A.. 1989. Michigan Loon Watch Report.	49N	29W	31	Marquette				
	Farwell's water milfoil	Myriophyllum farwellii	T		2008-08-12	Plant		Wildcat Canyon Creek	Garske, Steve and Chancey Moran. August 12, 2009 site survey, MNFI Special Plant form plus map.	49N	29W	11	Marquette				
	Lake herring or Cisco	Coregonus artedi	T		1987	Animal		Silver Lake Basin	Bailey, R.M., W.C. Latta, and G.R. Smith. 2003. MI Fish Atlas 2003 - Access database and shapefiles. In Digital Water Atlas V1 edited by Institute for Fisheries Research, MI DNR, Feb 20 2003.	49N	29W	1,12	Marquette				
	Narrow-leaved gentian	Gentiana linearis	T		1966-09-11	Plant	G	Log Lake	BOURDO, E.A. 1966. MCT-F	49N	29W	32,33,34	Marquette				

New Search

Refine Search

◀ Previous 25 Records

Next 25 Records ►


[MNFI Home](#) [Contact Us](#) [Plant List](#) [Animal List](#) [Abstracts](#) [Help](#)

Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE
UNIVERSITY
EXTENSION

Search Results for Town 49N, Range 30W


Query Results Generated on Aug 10, 2012

Displaying Record 1 to 22 of 22 Records Found

Database Updated on Mar 15, 2012

[New Search](#)
[Refine Search](#)
[◀ Previous 25 Records](#)
[Next 25 Records ▶](#)

Photo	Common Name	Scientific Name	State Status	Federal Status	Last Observed Date	Element Category	Mapping Precision	Site of Observation	Best Documentation of EO	Town	Range	Section	County
	Big-leaf sandwort	Moehringia macrophylla	T		2000-06-12	Plant		Mc Cormick Wilderness	Chadde, Steve. 2000. Ottawa National Forest site survey	49N	30W	1	Marquette
	Common loon	Gavia immer	T		1987-06-21	Animal	M	Upper Baraga Lake	Hammill, J.H. 1982. Results of the 1982 Upper Peninsula Loon Survey.	49N	30W	2,3	Marquette
	Common loon	Gavia immer	T		1997	Animal	M	Arfelin Lake - Marquette County	Hammill, J.A. 1987. March 3 - MNDR Interoffice Communication to L.A. Wilsman, MNFI Re: Loon Data.	49N	30W	21	Marquette
	Common loon	Gavia immer	T		2007	Animal	M	Herbert Lake - Marquette County	Michigan Loon Preservation Association. 1992. Michigan Loon Watch Report.	49N	30W	7,18	Marquette
	Common loon	Gavia immer	T		1993	Animal	M	Section 28 Lake		49N	30W	21,28	Marquette
	Common loon	Gavia immer	T		1993-07	Animal	M	Vanriper Lakes	Westhoven, A.. 1989. Michigan Loon Watch Report.	49N	30W	25,36	Marquette
	Common loon	Gavia immer	T		2004	Animal	M	Lake Keewaydin - Baraga/Marquette County	Michigan Loon Preservation Association. 1996. Michigan Loon Watch Report.	49N	30W	31	Marquette
	Common loon	Gavia immer	T		1991-07	Animal	M	Lake Elinor - Marquette County		49N	30W	17,19,20	Marquette
	Common loon	Gavia immer	T		1996-07	Animal	M	Four Island Lake - Marquette County		49N	30W	9,16	Marquette
	Dwarf bilberry	Vaccinium cespitosum	T		2004-07-21	Plant		Hasseib Lake	Chadde, S.W. 2000. Aug 15 - MNFI Special Plant Survey Form and map	49N	30W	14,22	Marquette
	Dwarf bilberry	Vaccinium cespitosum	T		2005-07-26	Plant		Peshekee River - Baraga Creek	Trull, Sue, Sean Dunlop, Christy Thompson & Joanne Thurber. 2005-07-07. Special Plant Survey Form with maps, photos and soil profile - Vaccinium cespitosum.	49N	30W	15	Marquette
	Farwell's water milfoil	Myriophyllum farwellii	T		2001-08-11	Plant	G	Indian Lake	Albert, D.A. 2001. August 22 - MNFI Site Survey Summary and map.	49N	30W	29	Marquette
	Fragrant cliff woodfern	Dryopteris fragrans	SC		2001-08-07	Plant		Mc Cormick Wilderness Area	Chadde, Steve. June 19 and August 30, 2000. Ottawa National Forest survey.	49N	30W	2,10,15	Marquette
	Narrow-leaved gentian	Gentiana linearis	T		1965-08-16	Plant	M	Haypress Dam	Bourdo, E.A. 1965. MCT-F	49N	30W	4,5,6	Marquette
	Narrow-leaved gentian	Gentiana linearis	T		1965-08-25	Plant	M	Ephrian Creek	PRINGLE, J.S. 1965. #389,399 MICH	49N	30W	15,16,17,20,21,22	Marquette
	Narrow-leaved gentian	Gentiana linearis	T		2001-09-07	Plant		Mc Cormick Wilderness	Chadde, Steve. August 22, 2000. Ottawa National Forest survey	49N	30W	11	Marquette
	Narrow-leaved gentian	Gentiana linearis	T		2001-08-22	Plant		Peshekee River-West Branch	Albert, D.A. 2001. August 22 - MNFI Site Survey Summary and map.	49N	30W	29,32	Marquette
	Narrow-leaved gentian	Gentiana linearis	T		2005-07-26	Plant		Mccormick Wilderness	Bushman, Matt, Tom Strietzel, Jo Thurber & Christy Thompson. 2005-07-26. Special Plant Form with maps, photos - Gentiana linearis	49N	30W	15	Marquette
	Northern blue	Lycaeides idas nabokovi	T		1995	Animal	S	Mc Cormick Tract	Mueller, S. 1988. Report to MNFI.	49N	30W	15	Marquette
	Northern blue	Lycaeides idas nabokovi	T		1996	Animal	S	Peshekee Meadow		49N	30W	6	Marquette
	Northern blue	Lycaeides idas	T		1994-07-10	Animal	S	Hasseib Lake Sw		49N	30W	22	Marquette

	Osprey	nabokovi Pandion haliaetus	SC	2000-06-03	Animal	Herbert Lake	Postupasky, S. 2000 Osprey nesting surveys in the Upper Peninsula - Report to DNR.	49N	30W	17,18,19,20	Marquette
							New Search	Refine Search	◀ Previous 25 Records	Next 25 Records ▶	

Attachment 2

Draft Cooperative Stewardship Agreement

**COOPERATIVE STEWARDSHIP AGREEMENT FOR
CONSERVATION EASEMENT
DRAFT
October 31, 2012**

This Cooperative Stewardship Agreement for Conservation Easement (Agreement) is made effective and entered into as of this _____ day of _____, 20____, by and among:

The PERMITTEE and STEWARD, MARQUETTE COUNTY ROAD COMMISSION (MCRC), a Marquette County Governmental Entity, whose address is: 1610 N. Second Street Ishpeming, Michigan 49849;

The GRANTOR of the EASEMENT, RIO TINTO EAGLE (RTE), a Michigan corporation, whose address is 4547 County Road 601, Champion, Michigan 49814; and,

The GRANTEE, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) whose address is P.O. Box 30458, Lansing, Michigan 48909-7958 or Constitution Hall, 1st Floor South, 525 West Allegan Street, Lansing, Michigan 48933.

Preamble:

The MDEQ may in certain circumstances accept preservation of existing wetlands as mitigation for permitted wetland impacts, if MDEQ determines that all of the following conditions are met:

- A. The wetlands to be preserved perform exceptional physical or biological functions that are essential to the preservation of the natural resources of the state or the preserved wetlands are an ecological type that is rare or endangered;
- B. The wetlands to be preserved are under a demonstrable threat of loss or substantial degradation due to human activities that are not under the control of the applicant and that are not otherwise restricted by state law; and,
- C. The preservation of the wetlands as mitigation will ensure the permanent protection of the wetlands that would be otherwise lost or substantially degraded.

Recitals:

WHEREAS, the Permittee and Grantor, as a condition of MDEQ Permit 11-52-0075-P, (Exhibit A) granted a Conservation Easement (Exhibit B) to the Grantee over approximately 1,576 acres of Property.

WHEREAS, MDEQ, pursuant to Permit conditions, requires long-term sustainable stewardship to minimize threats of loss or degradation to the wetlands and their integral habitat present on the Property (Conservation Easement Area).

WHEREAS, the Grantor will transfer ownership of the Property to the Permittee and Steward as soon as practical after the Conservation Easement is recorded.

WHEREAS, it is the desire of the Permittee and Steward to transfer the ownership and stewardship of the Conservation Easement Area to the U.S. Forest Service in order that the Conservation Easement Area be included in the McCormick Wilderness.

WHEREAS, the Steward agrees to enter into a cooperative stewardship arrangement on the Property, until such time that the ownership and stewardship of the Conservation Easement Area is transferred to the U.S. Forest Service.

WHEREAS, the Steward agrees to the management of the Conservation Easement Area pursuant to an approved Long-Term Management Plan.

WHEREAS, the Permittee and Steward, Grantor and Grantee, all have mutual goals with respect to the permanent protection of the functions and values of the wetlands within the Conservation Easement Area and its ultimate inclusion into the McCormick Wilderness.

Conservation Values:

The Property possesses ecological values of prominent importance to the public. These values are referred to as the "Conservation Values" in this Agreement.

WILDLIFE VALUES:

- The Property contains significant natural habitat in which fish, wildlife, and plants thrive in a natural state.
- The Property contains large tracts of sustainable habitat for many plants, birds, fish, and terrestrial animal species.
- A diversity of plant and animal life are found on the Property in an unusually broad range of habitats.
- The Property contains habitat for rare, endangered, or threatened species of animals, fish, plants, or fungi, including: *narrow leaved gentian*, a *State Threatened plant species*.
- The Property contains natural wetland areas that provide habitat for aquatic invertebrates, reptiles, amphibians, and aquatic and emergent vegetation.

ECOLOGICAL HABITAT:

- The Property contains ecologically vulnerable wetland ecosystems such as *Poor Fen*, *Muskeg*, *Rich Conifer Swamp*, *Hardwood Conifer Swamp* and *Hardwood Swamp*, as described in Wetlands Protection, Part 303, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.30301 et seq. that are present on the Property. These wetlands provide valuable public benefits such as flood control by hydrologic absorption and storage capacity, wildlife habitat, threatened species habitat, pollution treatment, erosion control, and sources of nutrients for water food cycles and nursery grounds and sanctuary for fish.
- The Property provides an upland buffer zone that is critical to the protection of the values of the wetland habitat.
- The Property provides valued native forest land, which includes diverse native species, trees of many age classes and structural diversity, including a multi-story canopy, standing dead trees, and downed logs.

WATERSHED PROTECTION:

- The Property provides important natural land within the Dishno Creek watershed. Protection of the Property in its natural and open space condition helps to ensure the quality and quantity of water resources for this area.
- The Property includes approximately 22,000 feet of frontage on *Dishno* Creek and its tributaries.
- Sections of the Property are situated on hillsides with slopes greater than 20% that are adjacent to or in close proximity to Dishno Creek. The vegetated slopes would be highly susceptible to erosion damage and accelerated stormwater runoff that could adversely affect water quality of Dishno Creek if the trees or other plants were removed.

ADJACENT TO PROTECTED LANDS:

- The Property is adjacent to and shares 3.5 miles of common boundary with the *McCormick Wilderness*.
- This Easement protects natural areas that support the ecological viability of a national wilderness area, the McCormick Wilderness.

THREATS

- The Property is currently threatened by non-native invasive plant species, including spotted knapweed and European swamp thistle. While not identified on-site to-date, Phragmites and purple loosestrife also pose potential threats.
- The Property requires on-going maintenance activities, removal of roads and limiting vehicle use of the property to preserve the unique characteristics of the site.
- The Property has been subject to commercial logging prior to placement into the Conservation Easement and is adjacent to land under commercial logging uses that may otherwise expand into the wetland and upland areas.

NOW, THEREFORE, in consideration of the mutual promises, agreements, and undertakings of the parties set forth in this Agreement, the parties agree to as follows:

Terms and Conditions of the Stewardship Agreement:

The Stewardship Agreement

The purpose of this Agreement is to provide long-term stewardship of the Conservation Easement Area to ensure that the site will be managed and maintained to preserve the long-term functions and values of the wetlands.

The Agreement shall be framed on the unique aspects of the property described in the Baseline Ecological Report (Exhibit C) and addresses the threats and uses associated with the property that require long-term stewardship as described in the Long-Term Management Plan (Exhibit E).

A. Permittee/Steward Responsibilities under this Agreement:

1. Permittee shall employ King & MacGregor Environmental, Inc. to prepare a Baseline Ecological Report that documents the current ecological conditions of the Conservation

Easement Area. The Baseline Ecological Report shall be prepared and submitted to the parties by November 1, 2013. All parties shall have the opportunity to review and comment on the Baseline Ecological Report, which shall be approved by MDEQ.

2. The Baseline Ecological Report shall include:
 - a. A description of the physical condition of the Conservation Easement Area as of the date of the initial inspection for the purpose of establishing a baseline against which to compare any future changes to the Conservation Easement Area;
 - b. Maps of the site, a depiction of all existing human-made modifications, a description of significant plant communities (with plant and animal species lists), land use history, distinct natural features, and photographs; and,
 - c. An assessment of existing uses within and surrounding the Conservation Easement Area and an identification of those uses that may affect the ecology of the Conservation Easement Area.
3. After the Baseline Ecological Report has been approved, the Permittee shall prepare a final Long-Term Management Plan. This plan shall not be used to acquire prior DEQ approval for future plans or activities that may take place in or around the site that may compromise the Conservation Easement Area. The Long-Term Management Plan shall include the following details:
 - a. A management strategy to maintain conservation resource values and purposes of the Conservation Easement;
 - b. A vegetation management strategy for controlling non-native invasive plant species;
 - c. Overall site management required to minimize any threats to the Conservation Easement Area that could have a negative effect on the long-term viability of the Conservation Easement;
 - d. An assessment of existing uses and the maintenance issues associated with existing pathways, trails, structures, and the like; and,
 - e. A reporting schedule.
4. The Permittee shall provide and place signs, fences, or other suitable markings along the boundary of the Conservation Easement Area to clearly demarcate the boundary of the Conservation Easement Area in accordance with the Permit and this Agreement.

B. Steward – Responsibilities under this Agreement

The Steward shall have the following rights, responsibilities and obligations with respect to the Conservation Easement and the Conservation Easement Area.

1. The Steward and its designated representative shall have the right to enter the Conservation Easement Area at reasonable times on reasonable notice to the Grantor to monitor the Conservation Easement Area and perform other functions allowed or required by this Agreement (Exhibit D). The Steward may not, however, interfere with Grantor's use and quiet enjoyment of the Property, and the Steward shall not interfere with Grantor's business operations while exercising its rights under this Agreement.
2. The Steward shall create a Long-Term Management Plan that details the Steward's goals and actions necessary to manage the Conservation Easement Area. The Long-Term Management Plan shall not impose any obligations or restrictions upon Grantor in excess of or inconsistent with those required in the Permit and Conservation Easement. The Long-Term Management Plan shall be approved in writing by Grantor and MDEQ.
3. The Steward shall have the obligation to inspect the Conservation Easement Area one time per year for the first three years, then one time every two years for 10 years, and

then one time every three years to document the condition of the Conservation Easement Area as compared to the Baseline Ecological Report. The Steward shall conduct the inspections on a date and at a time acceptable to both MDEQ and Grantor and shall provide Grantor and MDEQ with written notice no less than fifteen (15) days prior to the proposed inspection date. Grantor and MDEQ shall have the right to participate in such inspection. The Steward shall prepare and provide a copy of the annual monitoring report to Grantor and MDEQ.

4. The Steward shall be responsible for maintaining and replacing signs or other suitable markings along the boundary of the Conservation Easement Area, in accordance with the Permit and this Agreement.
5. The Steward shall perform the ecosystem management of the Conservation Easement Area in accordance with the Long-Term Management Plan, this Agreement and the Conservation Easement.
6. The Steward shall not initiate work in the Conservation Easement Area except as authorized under the Permit, the Conservation Easement, the approved Long-Term Management Plan, or this Agreement, and only with the consent of the Grantor and MDEQ.
7. The Steward shall, as part of its duties, work cooperatively with the Property owner and adjacent property owners to resolve any general compliance issues. Those issues that cannot be resolved informally or involving more than minor violations of the Conservation Easement, or that may be beyond Grantor's control, but are affecting the Conservation Easement, shall be referred to MDEQ.
8. The Steward shall report significant complaints and any actual or threatened violations of the Conservation Easement to MDEQ. MDEQ will exercise its enforcement authority under the Conservation Easement to prevent or correct such violations. The Steward shall have no authority to enforce any of the provisions of the Conservation Easement.
9. Should the Steward fail to meet its obligations under this Agreement, MDEQ shall provide a written Notice of Termination for Default to the Steward identifying all appropriate and necessary corrective actions and shall allow 30 days from the date of the Default Notification, or a mutually agreed-upon schedule, for the Steward to comply with the terms and obligations of this Agreement. Failure of the Steward to comply with this Agreement or any Notice of Termination for Default from MDEQ will result in the stewardship funds and any accrued interest being forfeited to MDEQ.

C. MDEQ Responsibilities

1. MDEQ shall review and approve the Baseline Ecological Report and the Long-Term Management Plan. MDEQ retains final approval of these documents.
2. MDEQ shall exercise its enforcement authority under the Conservation Easement to prevent or correct violations that may compromise the Conservation Easement Area.
3. MDEQ shall review annual reports prepared by the Steward to ensure that the Steward's goals and implementation actions in managing the ecosystems of the Conservation Easement Area are met.
4. MDEQ shall oversee Steward's obligations to ensure that Steward is meeting goals and objectives of this Agreement.
5. MDEQ shall record this Agreement with the Conservation Easement.

D. General Terms

1. This Agreement does not grant or convey to the Steward, MDEQ or any other person or entity any right to possession or use of the Conservation Easement Area except as expressly provided herein.

2. This Agreement is binding upon, and inures to the benefit of the parties and their successors and assigns. If and when the Conservation Easement Area is transferred to a Future Owner, the Steward shall continue to have the right to enter the Conservation Easement Area at reasonable time on reasonable notice to monitor the Conservation Easement Area and perform other functions allowed or required by this Agreement. Notwithstanding the foregoing to the contrary, in the event that the Conservation Easement is extinguished or terminated, then this Agreement shall also terminate and be of no further force and effect without any further action by any party to this Agreement. In this case the Steward shall transfer all remaining funds in the endowment for this site to the Grantor.

3. This Agreement, the Conservation Easement, and MDEQ permit set forth the entire agreement of the parties with respect to the subject matter hereof, and supersede all prior or contemporaneous discussions, understandings and agreements related thereto. No amendment, alteration or modification of this Agreement shall be valid and binding unless in writing and signed by all parties hereto.

4. This Agreement shall be governed by and construed in accordance with the laws of the State of Michigan.

5. To the extent there is any conflict or inconsistency between this Agreement (including any plans and reports prepared hereunder) and the Conservation Easement or the Permit, the terms and conditions of the Conservation Easement or Permit shall control and be binding on the parties, and shall supersede any conflicting or inconsistent terms in this Agreement.

6. For purposes of notices or any other writing permitted or required to be given under this Agreement, such notice shall be personally delivered or sent by first class mail, certified mail, or delivery by overnight courier service to the parties at the following addresses, as may be changed from time to time by notice hereunder being provided to the other parties:

If to the Steward:

Name and address of Steward

Attention: _____

If to Grantor:

Name and address of Grantor

Attention: _____

If to Permittee:

Name and address of Permittee

Attention: _____

If to MDEQ:

Michigan Department of Environmental Quality
Water Resources Division
Constitution Hall, 2nd Floor South
P.O. Box 30458
Lansing, Michigan 48909-7958
Attention: Conservation Easement Coordinator

If to MDEQ- District:

Michigan Department of Environmental Quality
Water Resources Division
420 Fifth Street
Gwinn, MI 49841-3004

LIST OF EXHIBITS

- Exhibit A – Permit
- Exhibit B – Recorded Conservation Easement
- Exhibit C – Baseline Ecological Report
- Exhibit D – Legal Access – Conservancies and Agents
- Exhibit E – Long-Term Management Plan

In Witness Whereof, the parties have executed this Agreement on the date first above written.

GRANTOR:

Signature: _____

Type/Print Grantor's Name

Title (if signing on behalf of an organization)

Organization Name (if signing on behalf of an organization)

STATE OF MICHIGAN }
COUNTY OF _____ } ss

IF SIGNING ON BEHALF OF AN ORGANIZATION, THIS MUST BE COMPLETED:

The foregoing instrument was acknowledged before me this ____ day of _____,
20__ by _____, (name[s]) the _____, (title)
of _____ (Organization name) a _____, (state)
corporation, partnership, municipality, or limited liability company (circle one), on behalf of the
organization.

(Signature of Notary Public)

(Typed or Printed name of Notary Public)

Acting in: _____ County, Michigan

My Commission is in: _____ County, Michigan

My Commission Expires: _____

(OR) IF SIGNING AS AN INDIVIDUAL OR MARRIED PERSON, THIS MUST BE COMPLETED:

The foregoing instrument was acknowledged before me this _____ day of _____, 20____
by _____, (name[s]) _____ (marital
status).

(Signature of Notary Public)

(Typed or Printed name of Notary Public)

Acting in: _____ County, Michigan

My Commission is in: _____ County, Michigan

My Commission Expires: _____

PERMITTEE:

Signature: _____

Type/Print Permittee's Name

Title (if signing on behalf of an organization)

Organization Name (if signing on behalf of an organization)

STATE OF MICHIGAN }
 } ss
COUNTY OF _____}

IF SIGNING ON BEHALF OF AN ORGANIZATION, THIS MUST BE COMPLETED:

The foregoing instrument was acknowledged before me this ____ day of _____,
20__ by _____, (name[s]) the _____, (title)
of _____ (Organization name) a _____, (state)
corporation, partnership, municipality, or limited liability company (circle one), on behalf of the
organization.

(Signature of Notary Public)

(Typed or Printed name of Notary Public)

Acting in: _____ County, Michigan

My Commission is in: _____ County, Michigan

My Commission Expires: _____

(OR) IF SIGNING AS AN INDIVIDUAL OR MARRIED PERSON, THIS MUST BE COMPLETED:

The foregoing instrument was acknowledged before me this ____ day of _____, 20__
by _____, (name[s]) _____ (marital
status).

(Signature of Notary Public)

(Typed or Printed name of Notary Public)

Acting in: _____ County, Michigan

My Commission is in: _____ County, Michigan

My Commission Expires: _____

STEWARD:

Signature: _____

Type/Print Name

Title

Organization Name

STATE OF MICHIGAN }
 } ss
COUNTY OF _____}

IF SIGNING ON BEHALF OF AN ORGANIZATION, THIS MUST BE COMPLETED:

The foregoing instrument was acknowledged before me this ____ day of _____,
20__ by _____, (name[s]) the _____, (title)
of _____(Organization name) a _____, (state)
corporation, partnership, municipality, or limited liability company (circle one), on behalf of the
organization.

(Signature of Notary Public)

(Typed or Printed name of Notary Public)

Acting in: _____ County, Michigan

My Commission is in: _____ County, Michigan

My Commission Expires: _____

GRANTEE:

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION

William Creal, Chief

STATE OF MICHIGAN}

} SS

COUNTY OF INGHAM}

The foregoing instrument was acknowledged before me this ____ day of _____, 20__ by William Creal, Chief, Water Resources Division, State of Michigan, on behalf of the Department of Environmental Quality.

(Signature of Notary Public)

(Typed or Printed name of Notary Public)

Acting in: Ingham County, Michigan

My Commission Expires: _____

FORM DRAFTED BY:

The Honorable William Schuette,
Attorney General
Department of Attorney General
Environment, Natural Resources, and
Agriculture Division
P.O. Box 30458
Lansing, Michigan 48909

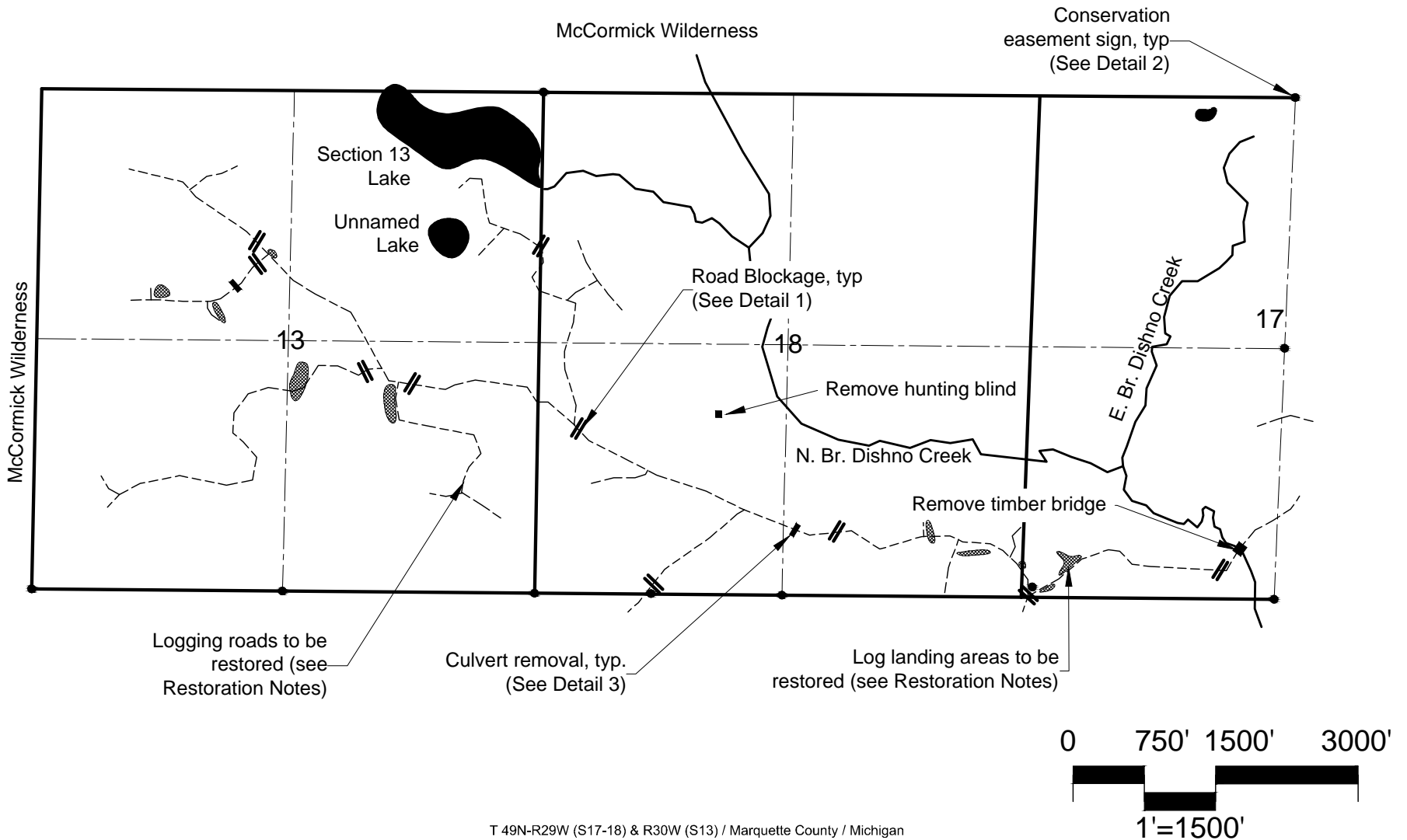
AFTER RECORDING RETURN TO:

**Michigan Department of
Environmental Quality
Water Resources Division
Constitution Hall, 2nd Floor South
Lansing, Michigan 48909-7958**

(March 17, 2011)

Attachment 3

Preservation Area Short-Term Management Activities Plan Set

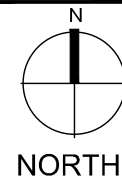


T 49N-R29W (S17-18) & R30W (S13) / Marquette County / Michigan

Preservation Area
Short-Term Management Activities:

Marquette CR 595

MDEQ File No. 11-52-0075-P



**King & MacGregor
Environmental Inc.**

2520 Woodmeadow SE
Grand Rapids, MI 49546
Phone: (616) 957-1231

43050 Ford Road, Suite 130
Canton, MI 48187
Phone: (734) 354-0594

DATE:	ISSUED FOR:
10/26/12	Client Review

